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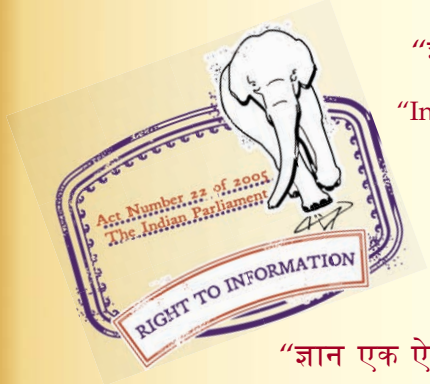
IS 10488-2 (1983): Frame Output Transformers Used With Television Picture Tubes, Part 2: Type fot IH for 470, 510, S90 and 610 mm Television Picture Tubes [LITD 5: Semiconductor and Other Electronic Components and Devices]



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Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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UDC 621·314·21 : 621·397·332·121

Indian Standard

(Reaffirmed 2004)

SPECIFICATION FOR FRAME OUTPUT TRANSFORMERS USED WITH TELEVISION PICTURE TUBES

PART 2 TYPE FOT 1H FOR 470, 510, 590 AND 610 mm TELEVISION PICTURE TUBES

0. General — This standard shall be read in conjunction with IS : 10488 (Part 1)-1983 ' Specification for frame output transformers used with television picture tubes: Part 1 General requirements and tests '.

1. Type Designation — This frame output transformer shall be designated as ' frame output transformer type FOT 1H '.

FOT : means frame output transformer
1 : represents television picture tubes of sizes 470, 510, 590 and 610 mm
H : denotes hybrid circuitry.

2. Application — This frame output transformer is meant to couple the saw tooth generator and the deflection coil in television receivers. It is intended for use in conjunction with deflection unit used with television picture tubes, Type DCU 1H.

3. Description — The frame output transformer shall have three separate windings. The tertiary winding can be used for voltage feedback. The magnetic circuit of the transformer shall comprise of C cores. The transformer shall meet, the self extinguishing and non-dripping requirements as specified in IS : 616-1981 ' Safety requirements for mains operated electronic and related apparatus for household and similar general use (*first revision*) '.

4. Mechanical Data — The outline shall be according to Fig. 1.

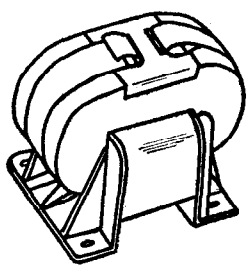

FIG. 1 FRAME OUTPUT TRANSFORMER

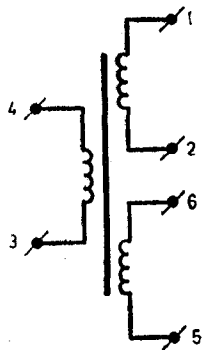

FIG. 2 ELECTRICAL SCHEMATIC

5. Mounting — The frame output transformer shall have four holes for mounting on either a printed circuit board or a metal chasis. Circuit connections shall be brought to connecting pins positions as indicated in Fig. 3.

6. Electrical Specifications

6.1 *General Electrical Data* — The values shall be measured on ambient temperature of 25°C (see Fig. 2).

6.1.1 *Inductance of windings*

Primary inductance across 1 — 2
At 2V, 50 Hz, and dc current 55 mA = 7·5 H ± 10 percent
At 2V, 50 Hz, and dc current 70 mA = 6 H ± 10 percent

6.1.2 *Winding resistance*

Primary	1 — 2	= 230 ohms ± 12 percent
Secondary	3 — 4	= 9·7 ohms ± 12 percent
Tertiary	5 — 6	= 165 ohms ± 12 percent

Adopted 22 February 1983

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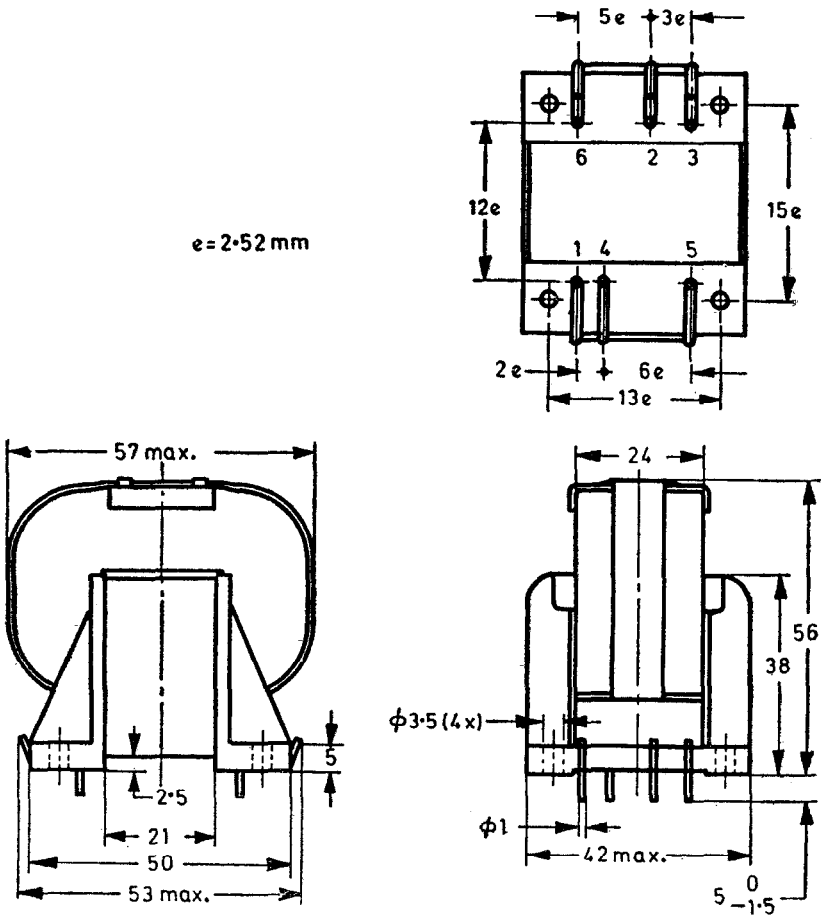

All dimensions in millimetres

FIG. 3 MOUNTING DETAILS

6.1.3 *Transformation ratio*

$$\frac{N \text{ prim}}{N \text{ sec}} = 5{\cdot}6$$

$$\frac{N \text{ prim}}{N \text{ tert}} = 3{\cdot}9$$

7. Marking — See **6** of IS : 10488 (Part 1) - 1983.

8. Material Construction and Workmanship — See **5** of IS : 10488 (Part 1) - 1983.

9. Classification of Tests — See **7.2** of IS : 10488 (Part 1) - 1983.

9.1 *General Conditions of Tests* — See **7.1** of IS : 10488 (Part 1) - 1983.

9.2 The test schedule and the requirements shall be in accordance with Table 1.

TABLE 1 TEST SCHEDULE AND REQUIREMENTS

Sl No.	Test	Clause Ref of IS : 10488 (Part 1)-1983	Conditions of Test	Requirements
(1)	(2)	(3)	(4)	(5)
1. *All Samples*				
	a) Visual examination	7.3.1	—	The workmanship condition and finish shall be satisfactory. The marking shall be legible
	b) Dimensions	7.3.2	—	The dimensions shall conform to the dimensions in Fig. 3
	c) Continuity of windings	7.4.1	—	Each winding shall be continuous

(Continued)

TABLE 1 TEST SCHEDULE AND REQUIREMENTS — *Contd*

Sl No. (1)	Test (2)	Clause Ref of IS : 10488 (Part 1)-1983 (3)	Conditions of Test (4)	Requirements (5)
	d) DC resistance	7.4.2	—	The dc resistance shall be in accordance with **6.1.2**
	e) Inductance	7.4.3	—	The inductance shall be in accordance with **6.1.1**
	f) Voltage proof	7.4.5	—	There shall be no breakdown or flashover at 1·5 kV ac
	g) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
2.	*First Group*			
	a) Solderability	7.6		
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each windings shall be continuous
	b) Robustness of termination	7.7	—	
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous
	c) Bump	7.8	1 000 bumps for 10 g	
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous
	d) Vibration	7.9		
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous
	iii) DC resistance	7.4.2	—	DC resistance shall be in accordance with **6.1.2**
	iv) Inductance	7.4.3	—	Inductance shall be in accordance with **6.1.1**
	v) Voltage proof	7.4.5	—	There shall be no breakdown or flashover at 1·5 kV ac
	vi) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
	e) Shock	7.14	30 g, duration 2 days	
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous
	iii) DC resistance	7.4.2	—	DC resistance shall be in accordance with **6.1.2**
	iv) Inductance	7.4.3	—	Inductance shall be in accordance with **6.1.1**
	v) Voltage proof	7.4.5	—	There shall be no breakdown or flashover at 1·5 kV ac
	vi) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
	f) Acceleration	7.15		
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous
	iii) DC resistance	7.4.2	—	DC resistance shall be in accordance with **6.1.2**
	iv) Inductance	7.4.3	—	Inductance shall be in accordance with **6.1.1**
	v) Voltage proof	7.4.5	—	There shall be no breakdown or flashover at 1·5 kV ac
	vi) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*

(Continued)

TABLE I TEST SCHEDULE AND REQUIREMENTS — *Contd*

Sl No.	Test	Clause Ref of IS : 10488 (Part 1)-1983	Conditions of Test	Requirements
(1)	(2)	(3)	(4)	(5)
	g) Climatic	7.10		
	i) Dry heat	7.10.2	At maximum category temperature 85°C	
	1) Visual examination	7.3.1	—	There shall be no damage
	2) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
	ii) Damp heat (cyclic) (first cycle)	7.10.3		
	1) Visual examination	7.3.1	—	There shall be no damage
	2) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
	iii) Cold test	7.10.4		
	1) Visual examination	7.3.1	—	There shall be no damage
	2) Voltage proof	7.4.5	—	There shall be no breakdown or flashover at 1·5 kV ac
	3) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
	iv) Air pressure (low)	7.10.5	60 kpa	There shall be no breakdown or failure of mechanical characteristics
	v) Damp Heat (cyclic) (remaining cycle)	7.10.3		
	1) Visual examination	7.3.1	—	There shall be no damage
	2) Continuity of windings	7.4.1	—	Each winding shall be continuous
	3) DC resistance	7.4.2	—	DC resistance shall be in accordance with **6.1.2**
	4) Inductance	7.4.3	—	Inductance shall be in accordance with **6.1.1**
	5) Voltage proof	7.4.5	—	There shall be no breakdown or flashover at 1·5 kV ac
	6) Insulation resistance	7.4.6	—	1 000 ohms, *Min*
3.	*Second Group*			
	a) Damp heat (steady state)	7.11		
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of winding	7.4.1	—	Each winding shall be continuous
	iii) DC resistance	7.4.2	—	DC resistance shall be in accordance with **6.1.1**
	iv) Inductance	7.4.3	—	Inductance shall be in accordance with **6.1.1**
	v) Voltage proof	7.4.5	—	There shall be no breakdown or flashover
	vi) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
4.	*Third Group*			
	a) Endurance (electrical)	7.16		
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous
	iii) DC resistance	7.4.2	—	DC resistance shall be in accordance with **6.1.2**
	iv) Inductance	7.4.3	—	Inductance shall be in accordance with **6.1.1**
	v) Voltage proof	7.4.5	—	There shall be no breakdown or flashover at 1·5 kV ac
	vi) Insulation resistance	7.4.6	—	1 000 M Ω, *Min*
	b) Flammability	7.17	—	Burning particles shall not detach from the component
5.	*Fourth Group*			
	a) Mould growth	7.12		
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous
6.	*Fifth Group*			
	a) Temperature rise	7.5	—	Temperature rise shall not exceed 30°C
7.	*Sixth Group*			
	a) Salt mist	7.13		
	i) Visual examination	7.3.1	—	There shall be no damage
	ii) Continuity of windings	7.4.1	—	Each winding shall be continuous

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